

REMARKS

The Final Office Action dated June 27, 2005 has been reviewed carefully and it is believed that the application is now in condition for allowance. All objections and rejections are respectfully traversed.

Claims 37-102 are pending in the application.

Claims 47-54, 59-61, 64, 67, 74-95 and 100 have been cancelled herein, without prejudice.

In paragraph 1 of the Office Action, the Examiner indicated that a reply to the final rejection must include cancellation of non-elected claims or other appropriate action. Accordingly, claims 47-54, 59-61, 64, 67, 75-95 and 100 have been cancelled herein without prejudice.

At paragraphs 2 and 3, the Examiner rejected claims 37, 44-46, 55, 62, 96-99 and 101-102 as being provisionally rejected under the judicially created doctrine of obvious-type double patenting as being unpatentable over claim 16 of co-pending U.S. Patent Application No. 10/870,570 (U.S. Patent Application Publication No. 2004/0265680). The referenced application is a divisional application from the instant application. A Terminal Disclaimer to Obviate a Provisional Double Patenting Rejection over a Pending Second Application (No. 10/870,570) is being filed herewith.

At paragraph 4, the Examiner rejected claims 37, 44-46, 55, 62, 96-99 and 101-102 as being provisionally rejected under the judicially created doctrine of obvious-type

double patenting as being unpatentable over claim 16 of co-pending U.S. Patent Application No. 11/082,306, which is also a divisional application from the instant application.

A Terminal Disclaimer to Obviate a Provisional Double Patenting Rejection over a Pending Second Application (No. 11/082,306) is being filed herewith.

At paragraphs 5 and 6 of the Office Action, the Examiner rejected claims 37-46, 55-58, 62, 63, 65, 66, 68-73, 96-99 and 101-102 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Published Patent Application No. 2002/0172851 to Corey et al. ("Corey"), in view of U.S. Patent No. 4,931,168 to Watanabe et al. ("Watanabe").

Applicants respectfully urge that the Corey published application is disqualified under 35 U.S.C. § 103(c) as a reference under 35 U.S.C. § 103(a) against the instant application for a U.S. Patent. Corey and the present invention were, at the time the invention was made, owned by MTI MicroFuel Cells Inc. or subject to an obligation of assignment to MTI MicroFuel Cells Inc.

The statute 35 U.S.C. § 103(c) states as follows:

Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

As noted, the statute indicates that prior art which qualifies only under one or more of subsections (e), (f), and (g) of section 102 shall not preclude patentability under § 103(c) where the subject matter and the claimed invention were, at the time the inven-

tion was made, owned by the same person or subject to an obligation of assignment to the same person. 35 U.S.C. § 102 provides as follows:

A person shall be entitled to a patent unless—

Section 102(a) “the invention...was patented...in this...country...before the invention thereof by the applicant.”

Corey does not qualify as prior art under 102(a) because the instant patent application was filed on February 19, 2002, which was before the publication date of November 21, 2002 and before the patenting of Corey on October 14, 2003. Applicants’ invention date, which is at least as early as his filing date, precedes the publication date of Corey’s patent application.

Section 102(b) provides “the invention was patented...more than one year prior to the date of the application for patent in the United States”.

Corey does not qualify as prior art under 102(b) because the instant application was filed before the patenting of Corey, as noted previously.

Section 102(c) precludes patentability when one has “abandoned the invention.”

Corey does not qualify as prior art under Section 102(c) because Applicants have not abandoned the present invention.

Section 102(d) precludes patentability when “the invention was first patented or caused to be patented...in a foreign country prior to the date of the application for patent in this country on an application for patent...filed more than 12 months before the filing of the application in the United States.”

Corey does not qualify as prior art under Section 102(d) because the present application was not filed in a foreign country before filing in the United States.

Accordingly, Applicants respectfully urge that the Corey reference qualifies as prior art only under 35 U.S.C. § 102(e), 102(f) or 102(g) and therefore is disqualified from serving as a reference under 35 U.S.C. § 103(a) by operation of 35 U.S.C. § 103(c).

With respect to claims 37, 44-46, 55-56, 62-63, 96-99, and 101-102, Applicants respectfully submit that the Examiner has relied upon Corey as the primary reference in rejecting those claims. It is believed that Corey has been disqualified pursuant to 35 U.S.C. § 103(c), as set forth above. Therefore, there is no reference precluding the patentability of those claims under 35 U.S.C. § 103(a). Consequently, it is respectfully submitted that in the absence of Corey, claims 37, 44-46, 55-56, 62-63, 96-99 and 101-102 are allowable.

Similarly, with respect to claims 38-39, 57-58, 68-71, 96-99 and 101-102, Applicants note that Corey appears to be the sole reference upon which the Examiner has relied to reject those claims under 35 U.S.C. § 103(a). It is respectfully submitted that, in the absence of Corey, there is no reference precluding patentability and the claims are thus allowable. The same comments apply with respect to the discussion on pages 8 and 9 of the Office Action regarding claims, 38 and 40, 41 and 43, 42 and 43, and 65. Accordingly, it is respectfully submitted that claims 38-39, 40-43 and 65 are allowable.

With respect to claims 66 and 72-73, the Examiner has combined the Corey reference with the Watanabe reference to reject claims 66 and 72-73 under 35 U.S.C. § 103(a).

Watanabe discloses a gas permeable electrode which comprises a gas permeable layer and a reaction layer comprising hydrophobic portions and hydrophilic portions.

The Examiner cites the following passage in the Office Action on Page 10, beginning at line 4, from Watanabe which states that "... the carbon dioxide produced is dissolved into the electrolyte. Since the hydrophilic apertures and the hydrophilic apertures in the reaction layer are extremely fine and in proximity, the carbon dioxide produced evaporates into the hydrophobic fine apertures before super saturation thereof in the electrolyte where the gases produced form gas bubbles which reach the rear side of the electrode through the passage in the reverse direction of the methanol passages, and is released." (Col. 6, lines 55-63).

However, Watanabe goes on to teach that "the carbon dioxide... is released as gas bubbles into water." (Col. 6, line 64) (Emphasis added).

This teaching does not disclose, teach or suggest to those skilled in the art Applicants' claimed invention. More specifically, claims 66 and 72-73 depend upon independent claim 62, which includes *a cell housing with an anode chamber defined between the anode aspect of the catalyzed membrane and one exterior portion of said cell housing, with said chamber having no liquid exit port for liquid.*

Watanabe's teachings alone regarding a gas permeable electrode do not disclose teach or suggest Applicants' claimed invention because Watanabe does not teach a cell housing with no liquid exit port. Corey has been disqualified as a reference herein. It is, therefore, respectfully submitted that Watanabe alone does not preclude the patentability of the direct oxidation fuel cell system as claimed in claims 66, 72 and 73.

At paragraph 7, claims 37-46, 55-58, 62, 63, 65, 66, 68-73, 96-99 and 101-102 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Corey et al. in view of the Examiner's indication of Applicants' admitted prior art. The Examiner cites the first full paragraph of page 10 of Applicants' Specification in this regard, which states:

This is possible based upon several aspects of the present invention. As will be understood by those skilled in the art, direct methanol fuel cells produce liquid water (H₂O) at the cathode and gaseous carbon dioxide (CO₂) at the anode as chemical products of the reaction. Prior systems, such as those set forth in Fig. 1, and in U.S. Patent 5,599,638, separate carbon dioxide produced in the anodic reaction out of the system to ambient air, by circulating any unreacted fuel mixture and carbon dioxide carried within it through gas separators located outside the fuel cell anode chamber, or allowing the carbon dioxide to be vented passively directly to the ambient environment at a vent located outside the fuel cell anode chamber, based on the tendency of gasses in a liquid solution to rise. Alternatively, the carbon dioxide may be used to perform work within the system. Such systems have been described in commonly-owned U.S. Patent Application Serial No.: 09/717,754, filed on November 21, 2000, for a PASSIVELY PUMPED LIQUID FEED FUEL CELL SYSTEM, which is incorporated by reference herein in its entirety.

It is first noted that with respect to claims 37, 44-46, 55-56, 62-63, 96-99 and 101-102, Corey appears to be the sole reference upon which the Examiner has relied to reject those claims. Corey has been disqualified under § 103(a) by operation of § 103(c). Therefore, it is respectfully submitted that in the absence of Corey, there is no reference upon which those claims stand rejected and the claims are thus allowable.

Similarly, with respect to claims 38 and 40, claims 41 and 43, and claims 42 and 43 as well as claim 65, the Examiner appears to solely rely upon Corey which has been disqualified herein. Therefore those claims are, in the absence of Corey, patentable.

With respect to claims 66 and 72-73 the Examiner states that the Applicants' admitted prior art teaches prior systems that separate carbon dioxide produced in the anodic reaction of the system to ambient air by *inter alia* allowing the carbon dioxide to be vented passively directly to the ambient environment at a vent located outside the fuel cell anode chamber.

The venting of carbon dioxide from a vent outside of the anode chamber does not disclose, teach or suggest the claimed invention as set forth in claim 62. First, such venting does not suggest any particular cell housing structure (other than the presence of a vent), much less a cell housing having an anode chamber with no liquid exit port, where a pressure differential exists between the fuel source and the anode chamber of the fuel cell, as claimed in claim 66. Nor does such venting suggest that the delivery of fuel is performed by suction (claim 72) or by a capillary network (claim 73).

Also in connection with this ground of rejection, the Examiner characterizes Corey at page 13, lines 6 - 7 of the Office Action, as follows: "this structure also encompasses the absence of any water external pumping and/or active water removal element." Applicants respectfully disagree with this characterization of Corey.

With respect to the Examiner's response to Applicants' arguments, the Examiner in several instances refers to the Amendment dated September 1, 2004. Applicants would like to point out that another Amendment was subsequently filed on April 21, 2005. Indeed, the present Office Action specifically refers to that subsequent Amend-

ment in Paragraph 1 of the Office Action Summary in which it states that this Office Action is “responsive to the communication filed on April 21, 2005.”

The April 21, 2005 Amendment responded to the outstanding rejections and objections and claim amendments were made in order to enhance the claims to better claim the invention and to provide claims that are commensurate in scope with Applicants’ arguments, as requested by the Examiner. For example, in the April ‘05 Amendment, claim 37 was amended to specifically recite “at least one gaseous effluent release port in said anode chamber, which is in substantially direct gaseous communication with the ambient environment, *to vent* gaseous product of an electricity-generating reaction from said anode chamber to the ambient environment, *and not into said cathode chamber*, as said gaseous product is generated.

Therefore, it is unclear why the Examiner continues to refer to the earlier Amendment of September of 2004, as the matters raised in response thereto by the Examiner were addressed in the subsequent Amendment in a sincere effort by the Applicants to address the Examiner’s objections and rejections.

Summary


All of the objections and rejections raised by the Examiner have been addressed herein. Terminal Disclaimers have been filed to obviate the provisional type double patenting rejections.

It is respectfully submitted that the application is now in condition for allowance.

Please do not hesitate to contact the undersigned in order to advance the prosecution of this application in any respect.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,


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